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AN EXPLORATION OF SICK LEAVE PATTERNS

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AN EXPLORATION OF SICK LEAVE PATTERNS

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SUMMARY AND HIGHLIGHTS

Do USDA agencies show consistent differences in relative use of sick leave after differences in the characteristics of their employees are taken into account?

"Yes," is the answer obtained from an analysis based upon data contained in the "Survey of Annual and Sick Leave Use and Carryover: Leave Year 1965."

Agencies that are high (above the Department average) in use of sick leave one year tend to be high the next; agencies that are low stay low. If the men in an agency use sick leave more than the average for all men in the Department, the women in that agency are likely to use more sick leave than the average for all women in the Department; and the same consistency for both sexes holds for low leave use agencies. The same consistency obtains also when the population is categorized by age, by grades below GS-15, and by Washington and Field locations.

Since the characteristics and composition of the employee groups do not seem to explain the consistent differences among agencies in the amount of sick leave used, it is suggested that further study be addressed to such questions as: Are these results due to differences in administrative attitudes or policies, in work structure or environment, in organization, in control procedures, in ways of collecting or keeping sick leave data, or in any other ways?

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AN EXPLORATION OF SICK LEAVE PATTERNS

What are we looking for?

Patterns of sick leave use are not random. We know that various characteristics of people and of situations have been found to be associated with different patterns of sick leave use. Because the many studies published have rarely dealt with the same combinations of people and situational characteristics, or used the same definitions of sick leave, the findings have often been inconsistent. Thus sweeping generalizations about what influences sick leave use across places and populations are to be avoided.

The specific question raised here is: Do USDA agencies show consistent differences in relative use of sick leave by their employees after differences in the characteristics of their employees are taken into account?

If the answer is "Yes," it would suggest that there may be differences among agencies in policies, operating practices, work environment, work structure, work organization, administrative attitudes, controls and other variables that tend to increase or diminish sick leave use in consistent ways. Further study might then seek to determine which variables account for the differences among agencies. Those variables that are susceptible to administrative alteration can be identified, then experimental efforts can be made to manipulate them to reduce or increase use of sick leave in those agencies where the incidence is considered to be unacceptably high or low.

What data did we look at?

Our basic data comes from the "Survey of Annual and Sick Leave Use and Carryover: Leave Year 1965," released as a staff report of the Office of Personnel, U. S. Department of Agriculture in May 1966. This is the second annual report of this kind. In it are contained tables that show for the total Department and 31 primary agencies, offices and staffs, the average number of days of sick and annual leave used by employees in 1964 and 1965. They include subdivisions by sex and age, by pay grade, and by Washington and Field location. We restricted our examination to Classification Act (GS) employees.

The reader can refer to the report cited to find the "average days sick leave used" by personnel in the categories of interest to him.

What did we do with the data?

These were the steps taken to examine the data in the tables presented in the Survey report and to develop two Agreement Indexes used to provide some rough measures of consistency of sick leave use patterns for agencies.

1. For each category (such as "sex and age group") a "total average days used" for the Department is given in the Survey tables.
2. This figure was used as the dividing line to code the "average days used" in each agency as HI or LO.

HI = agency "average days used" greater than total "average days used."

LO = agency "average days used" same or less than total "average days used."

EXAMPLE: Survey Table 1 (page 9 of 1965 "Survey of Annual and Sick Leave Use")

Sex and Age Group: Males Under 25 Total average days used = 2.4

Agency "average days used" and code:

<u>Agency</u>	<u>Aver. Days Used</u>	<u>Code</u>
C&MS	2.8	=1
ARS	2.9	=1
CEA	3.4	=1
FCS	0.5	=0
FHA	1.1	=0

3. In some instances there were small agencies for which no cases were found in a subdivision of the table upon which an "average" could be computed. These agencies were eliminated from all analyses of that table. Consequently the N (number of agencies) is different for the different analyses.

EXAMPLE: Survey Table 1. N=18

No data for:

NAL Males 61 and over

OGC Males under 25

etc.

4. The basic building block for study was 2 X 2 analysis comparing the various subcategories in the Survey tables to see whether certain agencies tended to be consistently HI and others consistently LO.

EXAMPLES: Table 1 (below). Sex by Age analysis of sick leave (18 agencies)

		AGE			
		<u>25-30</u>		<u>31-40</u>	
		<u>FEMALE</u>		<u>FEMALE</u>	
		<u>LO</u>	<u>HI</u>	<u>LO</u>	<u>HI</u>
MALE	<u>HI</u>	2	10	4	6
	<u>LO</u>	5	1	4	4
		AIB = 1		AIB = 1	
		AIP = 83%		AIP = 56%	

This shows for 1965, that for the 25-30 Age group, in 15 out of 18 agencies, there was consistency in the relative incidence of sick leave between Male and Female employees after "corrections" for differences in Department Total averages in Age and Sex groups were made. That is, 10 agencies in which sick leave use for Males was HI (above 3.7) also showed HI (above 8.1) sick leave use among Females; and 5 agencies in which Males were LO also had LO Female sick leave use. Similarly there was "agreement" in the 31-40 age group 10 out of 18 times.

5. Two kinds of simple Agreement Indexes were used to "score" each 2 X 2 block.

AIb - Block Agreement Index

1 = Agreement greater than Disagreement (sum of HI-HI, LO-LO greater than HI-LO, LO-HI)

0 = Disagreement equal to or greater than Agreement

AIp - Percent Agreement Index

$$100 \times \frac{\text{Number of Agreements}}{\text{Number of Agreements and Disagreements}}$$

EXAMPLES: As indicated in the preceding examples, the respective

AIb's were 1 and 1

AIp's were 83% and 56%

6. Where appropriate, these indices were computed cumulatively across a series of subcategories.

EXAMPLES: Table 1 (below)

AIb = 6:6 (Agreement in 6 out of the 6 Age groups)

AIp = 64% Agreement for the 6 Age groups

Results

The comparisons made are presented in the tables below. Interpretive statements will follow each table. Additional generalizations will be made at the end of the series of tables.

Table 1

Comparison of Number of Agencies HI and LO in Sick Leave Used
During 1965 by Sex and Age Group (18 Agencies)

		AGE GROUP						Sum.
		-24	25-30	31-40	41-50	51-60	61-	
		FEMALE						
		LO HI	LO HI	LO HI	LO HI	LO HI	LO HI	
MALE	HI	3 7	2 10	4 6	1 7	2 6	4 6	
	LO	3 5	5 1	4 4	4 6	5 5	6 2	

Aib		1	1	1	1	1	1	6:6
Aip		55%	83%	55%	61%	61%	67%	64%

In every age group (6 out of 6) the agencies whose Female employees exceed the Department 1965 sick leave use average for women tend to be the same agencies whose Male employees exceed the sick leave use average for men. Across all Age groups Males and Females from the same agency are found in the same HI or LO quadrant almost 2 out of 3 times (64%).

Table 2

Comparison of Number of Agencies HI and LO in Sick Leave Used
During 1964 by Sex and Age Group (16 Agencies)

		AGE GROUP						Sum.
		-24	25-30	31-40	41-50	51-60	61-	
		FEMALE						
		LO HI	LO HI	LO HI	LO HI	LO HI	LO HI	
MALE	HI	3 8	1 8	3 6	2 6	2 6	7 4	
	LO	2 3	4 3	6 1	3 5	5 3	1 4	

Aib		1	1	1	1	1	0	5:6
Aip		63%	75%	75%	56%	69%	31%	62%

The data for 1964 are in essential agreement with those for 1965. Only in the oldest Age group is there a discrepancy. Overall agreement is 62% (vs. 64% in 1965.)

Table 3

Comparison of Number of Agencies HI and LO in Sick Leave Used During 1964 and 1965 for Each Sex by Age Group (16 Agencies)

		AGE GROUP						Sum.
		-24	25-30	31-40	41-50	51-60	61-	
		MALE - 1965						
		LO HI	LO HI	LO HI	LO HI	LO HI	LO HI	
1964	HI	3 8	0 9	2 7	2 6	2 6	4 7	
	LO	4 1	6 1	5 2	8 0	7 1	2 3	

		AIb	1	1	1	1	1	6:6
		AIp	75%	94%	75%	88%	81%	56% 78%

		FEMALE - 1965						
		LO HI	LO HI	LO HI	LO HI	LO HI	LO HI	
1964	HI	1 10	2 9	0 7	0 11	1 8	2 6	
	LO	4 1	4 1	7 2	4 1	4 3	7 1	

		AIb	1	1	1	1	1	6:6
		AIp	88%	81%	88%	94%	75%	81% 85%

In every Age group for men and for women the HI and LO agencies tend to be very much the same from year to year. Across all Age groups agencies maintain their same relative standings as HI or LO better than 4 out of 5 times (78% for Males; 85% for Females).

There seems to be consistency here overall, except that the sick leave patterns for the "executive levels" (GS-15 and above) in agencies are different from the middle and lower grades (GS 1-11) in the same agencies, as can be seen by the three zero AIb's in the last column. This appears part of a pattern of increasing difference in sick leave patterns accompanying increasing distance between grades. Thus, if we look at the AIp indexes we see that agreement is highest between adjacent grade groups, along the diagonal, and diminishes as a function of the number of steps away from the diagonal.

Table 5

Comparison of Number of Agencies HI and LO in Sick Leave Used During 1964 and 1965 by Grade Groups (27 Agencies)

		GRADE GROUP										
		1965										
		1-4		5-7		8-11		12-14		15 -		Sum.
		<u>LO</u>	<u>HI</u>	<u>LO</u>	<u>HI</u>	<u>LO</u>	<u>HI</u>	<u>LO</u>	<u>HI</u>	<u>LO</u>	<u>HI</u>	
1964	<u>HI</u>	2	16	0	21	1	20	0	17	3	6	
	<u>LO</u>	6	3	3	3	3	3	9	1	12	6	

	AIb	1		1		1		1		1		6:6
	AIp	81%		89%		85%		96%		67%		84%

It is evidenced here again, this time across grade groups, that the pattern of sick leave use for agencies is very stable from year to year.

Table 6

Comparison of Number of Agencies HI and LO in Sick Leave Used During 1965 in Washington Area and Field (19 Agencies)

		FIELD	
		<u>LO</u>	<u>HI</u>
WASH	<u>HI</u>	1	7
	<u>LO</u>	8	3

<u>AIb</u>		1	
<u>AIp</u>		79%	

For 19 Agencies having personnel located outside of the Washington, D.C. Metropolitan Area there is indication that during 1965 those who had HI sick leave use in Washington also had HI use in the Field and those LO in Washington were also LO in the Field. Agreement existed just about 4 out of 5 times (79%).

Table 7

Comparison of Number of Agencies HI and LO in Sick Leave Used During 1964 in Washington Area and Field (19 Agencies)

		FIELD	
		<u>LO</u>	<u>HI</u>
WASH	<u>HI</u>	6	3
	<u>LO</u>	6	4

<u>AIb</u>		0	
<u>AIp</u>		47%	

Sick leave use level between Washington and Field components of agencies did not display the same consistency in 1964 as in 1965. Agreement existed a bit less than half the time (47%).

Table 8

Comparison of Number of Agencies HI and LO in Sick Leave Used During
1964 and 1965 for Washington Personnel and for Field Personnel
(19 Agencies)

		1965			
		WASH		FIELD	
		LO	HI	LO	HI
1964	HI	4	5	1	6
	LO	7	3	8	4

	AIb	1		1	
	AIp	63%		74%	

When 1964 and 1965 are compared for Washington and Field personnel separately a more consistent picture is restored. Level of sick leave use (HI or LO) tends to be the same across agencies from one year to the next for personnel in Washington, and the same holds for personnel in the Field. Agreement is indicated about 7 times in 10 overall (63% and 74% respectively).

Looking back upon Tables 6 and 7 we note a difference between 1964 and 1965 in the number of agencies with Field personnel showing up HI (10 in 1965; 7 in 1964). This difference in dichotomization, with this relatively small N, may account for the discrepancy between the results found in the two years.

Summary of interpretations of sick leave use data

While the sick leave patterns of the executives (GS-15 and above) appear to be influenced in some unique ways that do not apply with corresponding force at lower grades and so do not correlate with the agency difference trends, they make up only a small proportion of the total population and so do not substantially affect the overall indication that our original hypothesis can be answered in the affirmative.

The techniques of analysis employed here have been quite crude. Nonetheless the results have been so consistent as to compell attention.

Agencies do show consistent differences in relative use of sick leave by their employees that largely cut across differences in characteristics of their employees. Agencies that are HI in use of sick leave one year tend

to be HI the next; agencies that are LO stay LO. If their men use sick leave, a lot or a little, their women do too. The same quite consistently obtains also when the population is categorized by age, grades below 15, and Washington or Field locations.*

The statistics do confirm the hypothesis originally stated (page 1, paragraph 3). They tell us that the differences between agencies in sick leave use do not seem to be a function of differences in the characteristics or composition of the populations in these agencies (at least those characteristics that are reported in the Survey). Therefore, they suggest that we need to look further--at situational factors within and between agencies--to see if we can account for the findings. The next step involves such questions as: Are there differences among agencies (or subdivisions thereof), that affect sick leave, in explicit and implicit policies, in work environment, in work structure, in organization, in administrative attitudes, in control procedures, in ways of collecting and keeping sick leave data, or in any other ways?

*Examination of annual leave data treated in the same way, it is interesting to observe, also shows similarly consistent patterns across agencies. There are even indications that the agencies HI in sick leave use are HI in annual leave use and that the same agencies tend to be LO in both. However, we will not belabor the point with any more tables.



